REMARKS

Reconsideration of the above-identified patent application in view of the amendments above and the remarks following is respectfully requested.

Claims 1-56 are pending in the application. Of the above, claims 16-38 and 49-56 have been allowed. Claims 1, 3, 4, 6, 7, 14, 39, 40, 42 and 46 have been rejected and claims 2, 5, 8-13, 15, 41, 43-45 and 48 have been objected to by the Examiner. The Examiner's rejections and objections to claims 2, 5, 8-13, 15, 41, 43-45 and 48 are respectfully traversed. Applicant gratefully acknowledges the allowance of claims 16-38 and 49-56. Applicant has addressed the objections as indicated below.

Objections

The Examiner has objected to the numbering of claims 44-57 as being misnumbered due to a missing claim 43. In agreement with the Examiner, claims 44-57 have been renumbered 43-56.

The Examiner has indicated that should claim 40 be found allowable, claim 48 will be objected under 37 CFR 1.75 as being a substantial duplicate thereof. Since Applicant submits below that claim 40 is allowable, Applicant agrees to cancel claim 48 without prejudice.

The Examiner has listed claims 2, 5, 8-13, 15, 41, 43-45 and 48 as being dependent upon a rejected base claim, but being allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. Applicant argues below that the referred-to base claims should be allowed, in which case the objection becomes moot.

§ 102(b) Rejections

The Examiner has rejected claims 1, 3, 4 and 39-40 under 35 U.S.C. § 102(b) as being anticipated by US Patent No. 4,959,546 to Bly et al. The Examiner's rejection is respectfully traversed.

Regarding claim 1, the claim recites 3 elements, including an "electro-optical" material in (a) and, in (b),: "an electrical mechanism for inducing a change in said index of refraction, said index change correlated with a temperature of said TSE". The Examiner asserts that Bly discloses all the elements of claim 1, including an electrical mechanism for inducing a change in the index of refraction of a temperature sensing element. Applicant respectfully submits that Bly's system *does not* include such an electrical mechanism. As indicated in its title and repeatedly through his description (e.g. col. 1, line 38, col. 2, line 10, etc.), Bly's invention utilizes a *thermo-optical* (TO) material (e.g. layer **19c**), in which the *equilibrium* index of refraction of that material changes with temperature (temperature-dependent, see col. 2, lines 29-33)), in contrast with the *electro-optical* (EO) material claimed in the present invention, in which, as well known in the art, the equilibrium index of refraction is temperature *independent*. In an EO material the index of refraction changes upon the application of an electric field, and deviates from its equilibrium value. In contrast, TO materials are not affected by the application of an electric field, and their index of refraction never deviates from its equilibrium value.

Since an electric field cannot possibly change the index of refraction of the thermo-optical material, it follows that Bly's invention does not involve in any way an electrical mechanism for inducing a change in the index of refraction of the TSE..In fact, Bly does not mention anywhere the words "electro", "electric" or "electronic", with the exception of a reference to an electro-optic modulator (col. 2, line 65) used to control a laser. His FIG. 1 does not include any electrical contacts applied to the TSE. Applicant thus respectfully submits that claim 1 is not anticipated by Bly.

Claims 3 and 4 depend from claim 1. In view of the argument above, Applicant submits that since claim 1 is not anticipated by Bly, claims 3 and 4 are similarly not anticipated by Bly.

Claim 39 recites in step (a) "providing a temperature sensing element (TSE) that includes an electro-optic (EO) material layer and characterized by an index of refraction" and in step (c) " electrically inducing a change in said index of refraction, said change correlated with said TSE temperature". Following the argument above re. claim 1, Bly's invention does not provide such an EO material in the TSE, and certainly does not electrically change its index of refraction. Applicant respectfully submits that Bly does not therefore anticipate claim 39, and, since claim 40 depends from 39, does not anticipate claim 40 either.

§ 103(a) Rejections

The Examiner has rejected claims 6-7 as being unpatentable over Bly as applied to claim 1, and further in view of Hornbeck et al (US 5,021,663); claim 14 as being unpatentable over Bly as applied to claim 1 and further in view of Elliott et al (US 4,594,507); claim 42 as being unpatentable over Bly as applied to claim 39, and further in view of Hornbeck et al (US 5,021,663); and claim 46 as being unpatentable over Bly as applied to claim 39, and further in view of Elliott et al (US 4,594,507). Applicant respectfully submits that since Bly's invention deals with TO and not with EO materials, and since it lacks the key inventive feature of electrical change in the index of refraction of the EO material, it cannot render obvious any of the cited claims 6, 7, 14, 42 and 46, alone or in combination with the other cited references. None of the added references deals with EO materials in which the index of refraction is changeable by application of an electric field.

In view of the remarks above, it is respectfully submitted that independent claims 1 and 39 and hence their dependent claims 3, 4, 6, 7, 14 and 40, 42 and 46 are now in condition for allowance. Prompt notice of allowance is respectfully and earnestly solicited.

Respectfully submitted,

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